1st DRD1 Collaboration Meeting

Plenary Session

Anna Colaleo, Piotr Gasik, Eraldo Oliveri, Leszek Ropelewski, Maxim Titov

DRD1 Collaboration Meeting, Opening Plenary Session, January 29, 2024

CERN RB approval & DRDC recommendation and guidelines in view of the first review and next steps

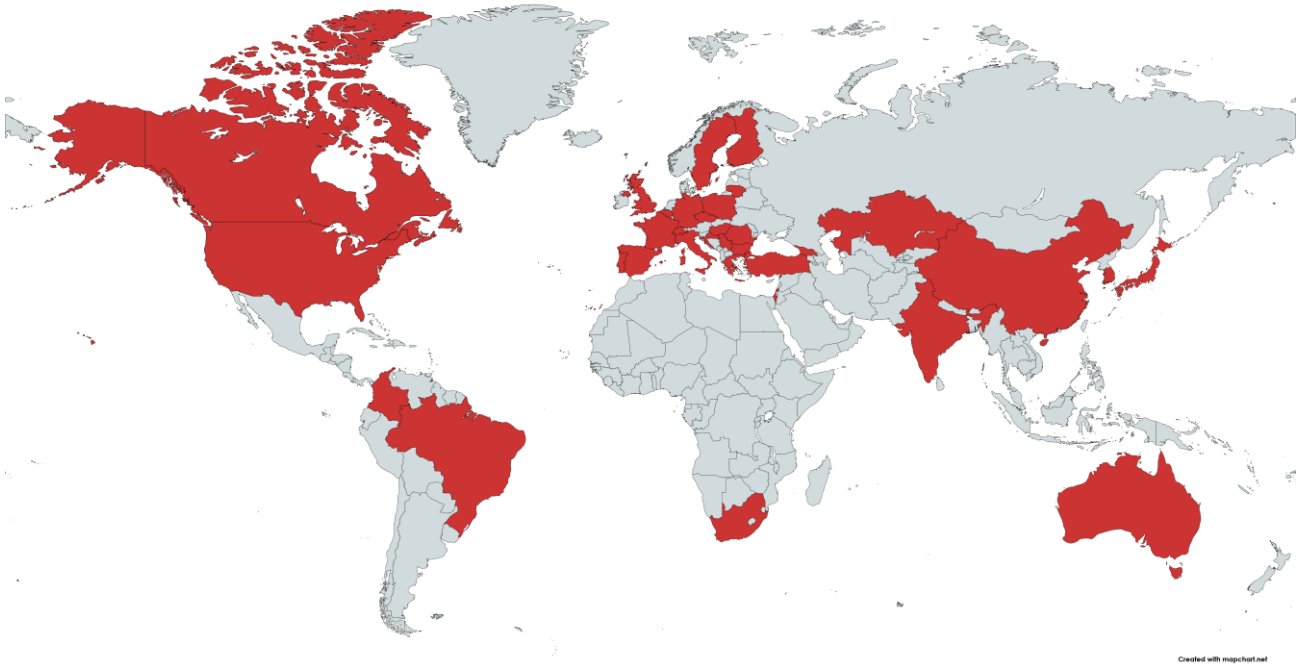
Successful path toward the DRD1 Collaboration

	Q4-2022/Q1-2023	Q2-2023	Q3-2023	Q4-2023	2024
DRD TEAM	▪ Formation of the DRD proposal team ▪ Collection of interest from the institutes (survey) ▪ Shaping the direction of RD. Community Workshops 1-3 March 2023 ➢ DRD1 Community Meeting, CERN/hybrid,	▪ **Writing the proposal** (scientific and organization) that includes conclusion and feedback from the workshop and survey ▪ Presentation and discussion of 1st draft ▪ Collect feedback by institutes in contact with their funding agencies about the best funding schema ➢ DRD1 Community Meeting, CERN/hybrid, June 22-23, 2023	**31 July –submission of the proposal,** **Collect information about:** ▪ resources needed ▪ resources available ▪ Interest of institutes/FA to contribute to specific tasks	DRD organization and scientific programs. • More feedback from FA and institutes about activities, milestones, deliverable • **Five update of the proposal** • **Final submission of the proposal on 1 December.**	▪ New structures operational and new R&D programmes underway • Through 2024, collection of MoU signatures with defined contribution areas per institute. • Start monitoring progress in organization
DRDC	▪ Interaction with ECFA Panel/ DRDC mandate reviewed and agreed with CERN management and EDP	▪ DRDC set, start the review (scientific, milestones, feasibility, financials)	▪ Follow the review revisions and upon green light from DRDC, ▪ **CERN research board approves the formation of the collaboration**		

- **Ramp up of new strategic funding and R&D activities 2024-2026**

The DRD1 Proposal

Great DRD1 community teamwork, allowed to shape the “legacy document” for the gaseous detectors domain for decades to come



- >700 participants from 161 institutes in 33 countries

  + 5 Industrial, Semi-Industrial partners and Research Foundations

Approved by CERN Reasearch board on 6th December!

DRD1 EXTENDED R&D PROPOSAL
Development of Gaseous Detectors Technologies
v1.5

Abstract

This document, realized in the framework of the newly established Gaseous Detector R&D Collaboration (DRD1)*, presents a comprehensive overview of the current state-of-the-art and the challenges related to various gaseous detector concepts and technologies. It is divided into two key sections.

The first section, titled "Executive summary", offers a broad perspective on the collaborative scientific organization, characterized by the presence of eight Working Groups (WGs), which serve as the cornerstone for our forthcoming scientific endeavours. This section also contains a detailed inventory of R&D tasks structured into distinct Work Packages (WPs), in alignment with strategic R&D programs that funding agencies may consider supporting. Furthermore, it underlines the critical infrastructures and tools essential for advancing us towards our technological objectives, as outlined in the ECFA R&D roadmap.

The second section, titled "Scientific Proposal and R&D Framework," delves deeply into the research work and plans. Each chapter in this section provides a detailed exploration of the activities planned by the WGs, underscoring their pivotal role in shaping our future scientific pursuits. This DRD1 proposal reinforces our unwavering commitment to a collaborative research program that will span the next three years.

Geneva, Switzerland

December 1, 2023†

*DRD1 Website: https://drd1.web.cern.ch/

†Last modification on January 28, 2024 (New institutes added)

Submitted to CDS (2024-01-9)

Updated to DRD1 web (2024-1-28)

1st DRDC meeting: minutes

Introduction:

DRD Proposals:

1. Four proposals submitted by DRD1, DRD2, DRD4, and DRD6 by end of July 2023.
2. DRD3 submitted in October 2023.
3. DRD5 and DRD7 expected to submit next year.
4. DRD8 formation under discussion.

DRDC Meetings and Proposal Updates:

1. Nine preparatory DRDC meetings held.
2. Proposals updated up to five times based on DRDC suggestions.

Steps After Approval:

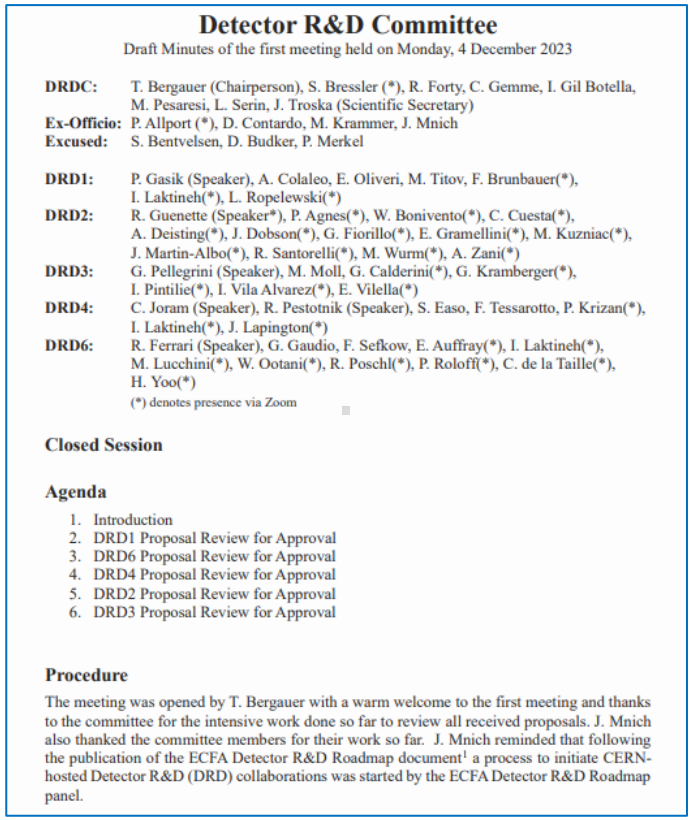
1. Publication of proposals as DRDC documents in CDS.
2. Registration of collaborations in the GreyBook database.
3. Signing of MoU based on CERN-provided template.

MoU Framework:

1. Lightweight MoU framework under consideration by CERN and its legal service.
2. Expected imminent release.
3. Parallel constitution of collaborations and formation of management bodies.

Contributions and Annexes:

1. Contributions of collaborating institutes detailed in annexes to the MoU.
2. Annexes signed by funding bodies providing resources.
3. CERN may provide a template for detailed MoU annexes.



Detector R&D Committee

Draft Minutes of the first meeting held on Monday, 4 December 2023

DRDC: T. Bergauer (Chairperson), S. Bressler (*), R. Forty, C. Gemme, I. Gil Botella, M. Pesaresi, L. Serin, J. Troska (Scientific Secretary)
Ex-Officio: P. Allport (*), D. Contardo, M. Krammer, J. Mnich
Excused: S. Bentvelsen, D. Budker, P. Merkel

DRD1: P. Gasik (Speaker), A. Colaleo, E. Oliveri, M. Titov, F. Brunbauer(*), I. Laktineh(*), L. Ropelewski(*)
DRD2: R. Guenette (Speaker*), P. Agnes(*), W. Bonivento(*), C. Cuesta(*), A. Deisting(*), J. Dobson(*), G. Fiorillo(*), E. Gramellini(*), M. Kuzniac(*), J. Martin-Albo(*), R. Santorelli(*), M. Wurm(*), A. Zani(*)
DRD3: G. Pellegrini (Speaker), M. Moll, G. Calderini(*), G. Kramberger(*), I. Pintilie(*), I. Vila Alvarez(*), E. Vilella(*)
DRD4: C. Joram (Speaker), R. Pestotnik (Speaker), S. Easo, F. Tessarotto, P. Krizan(*), I. Laktineh(*), J. Lapington(*)
DRD6: R. Ferrari (Speaker), G. Gaudio, F. Sefkow, E. Auffray(*), I. Laktineh(*), M. Lucchini(*), W. Ootani(*), R. Poschl(*), P. Roloff(*), C. de la Taille(*), H. Yoo(*)

(*) denotes presence via Zoom

Closed Session

Agenda

1. Introduction
2. DRD1 Proposal Review for Approval
3. DRD6 Proposal Review for Approval
4. DRD4 Proposal Review for Approval
5. DRD2 Proposal Review for Approval
6. DRD3 Proposal Review for Approval

Procedure

The meeting was opened by T. Bergauer with a warm welcome to the first meeting and thanks to the committee for the intensive work done so far to review all received proposals. J. Mnich also thanked the committee members for their work so far. J. Mnich reminded that following the publication of the ECFA Detector R&D Roadmap document[1] a process to initiate CERN-hosted Detector R&D (DRD) collaborations was started by the ECFA Detector R&D Roadmap panel.

DRDC approval

From the minutes

The DRDC **congratulates** all proto-collaborations on an excellent job in preparing their proposals.

The DRDC **recommends** that DRD collaborations are approved for an **initial period of three years, to be renewable.**

Approved collaborations will be **expected** to submit **annual reports** to the DRDC summarizing the progress made in the reporting period.

Approved collaborations are **expected** to make **public presentations** of their proposals **in the next open meeting of the DRDC** to be held around the **beginning of March 2024.**

DRDC recommendations to the DRDs

From the minutes

The DRDC **recommends** that the DRDs follow the **guidance** outlined below for the next steps:

- The DRDC **expects** that approved DRDs review and clarify with their **funding sources** the resources (material and effort) needed, actually available, and what may be requested.

- The DRDC **expects Work Packages** (defined by concrete milestones and deliverables) to be resource loaded for strategic funding, while **Working Groups** (if any) need not be.

- The DRDC **strongly encourages** all DRDs to put in place a Resources Review Board within their collaboration to evaluate and track the available and needed resources.

- The DRDC **suggests** revisiting detailed deliverables and milestones in order to start discussions with the Funding Agencies as soon as possible.
  The DRDC **expects** an update on progress of these discussions by mid-2024.

DRDC recommendations to the DRDs

From the minutes

The DRDC **recommends** that the DRDs follow the **guidance** outlined below for the next steps:

- The DRDC **suggests** that all DRDs consider the implementation of a **modest Common Fund (CF) contribution** to be paid annually by institutes joining the collaboration. Examples of items that could be covered by a CF: possible administrative costs if not covered elsewhere; collaboration-wide costs; small blue-sky high-risk projects.

- The DRDC **strongly suggests** that the nominations for all collaboration management positions be made following wide consultation to ensure representation of the whole collaboration.

- The DRDC **strongly suggests** that the **full management structure be appointed by the end of March 2024.**

General recommendations to CERN/DRDs

From the minutes

The DRDC **recommends** that CERN provides as a matter of urgency an example of a template for both the lightweight MoU and the annexes to facilitate their timely signature, allowing the actual R&D to get underway within the approved DRDs.

The DRDC **notes** that the question of administrative support beyond the basic level of user support provided to all CERN collaborations remains to be addressed.

The DRDC **recommends** that a position be considered for funding within the CERN EP department to provide collective administrative support for all DRD collaborations, given their hosting by CERN.

The DRDC **notes** that the DRDs co-exist with the CPAD process in the US, and **encourages** all DRDs to work together with CPAD to find synergies and avoid the duplication of effort.

DRDs final approval at CERN RB

DRD1
P. Gasik presented the DRD1 proposal. …The DRDC c**ongratulates** the DRD1 proponents on the high quality of their proposal.
The DRDC **was impressed** with the level of detail in the proposal…..

Current status of DRDs approval:

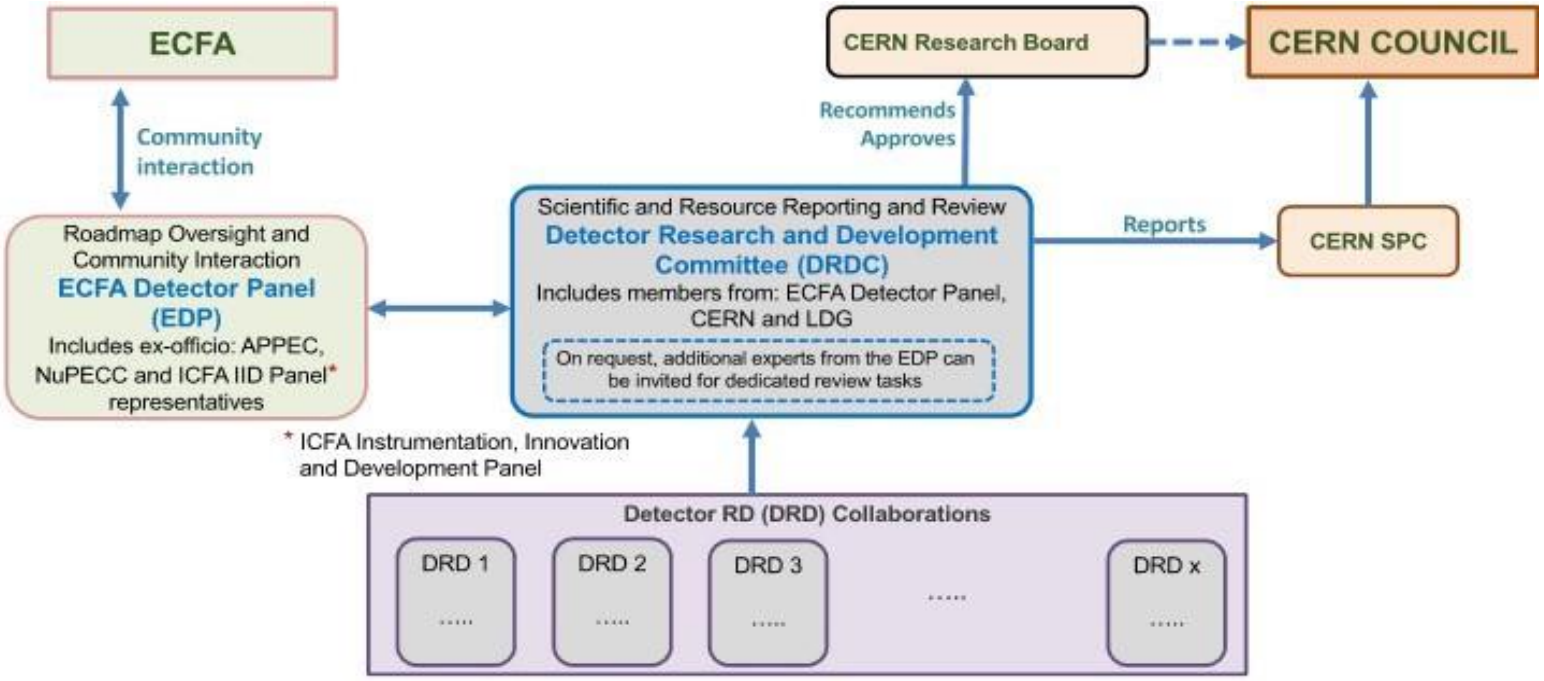
- DRD1, DRD2, DRD4, and DRD6 Collaborations approved at the CERN Research Board meeting on Dec. 6 for three years.
- DRD3 Collaboration approval is anticipated in March 2024.
- DRD5 white paper and DRD7 LoI documents expected for approval at the March Research Board

DRDs interactions with CERN

K. Jakobs Plenary ECFA on 17/11/2

ECFA Detector R&D Roadmap Panel (Coordinators and TF conveners) has formally concluded its work and has "no need to organise further meetings

DRDs are the new units, review and monitoring process is under the umbrella of the DRDC / EDP



Interaction between DRD collaborations and CERN **only through DRDC***

- *Review frequency will de defined by the DRDC*
- *First review middle 2024*

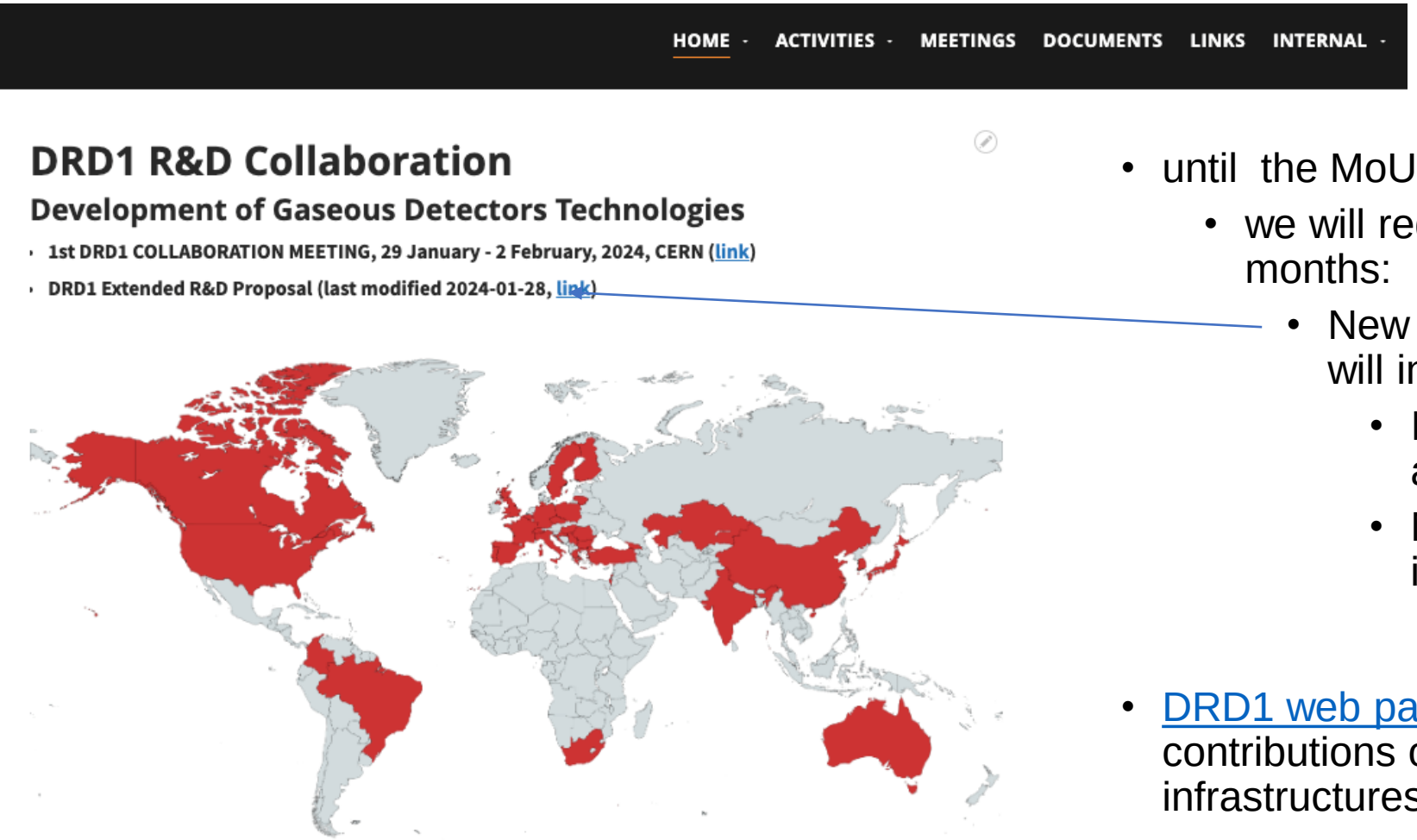
A new DRD Managers Forum hosted by the ECFA Detector Panel (which also includes the EDP and DRDC Chair ex officio): **two representatives** per DRD Collaboration

➔ Eraldo Oliveri and Maxim Titov as DRD1 spokesperson

Update of the proposal

New institutes would like to join and be included in the proposal

- to present role of the institution and garner support from funding agencies.



- until the MoU finalization:
  - we will reguraly update the proposal every 3 months:
    - New version uploaded on DRD1 web page will include:
      - Institution leader → member of CB , added to DRD1-CB@cern.ch
      - Members of institutes → they will be included in DRD1-members@cern.ch

- DRD1 web page will be regularly updated with contributions of Institutions to projects, activities and infrastructures

DRD1 Management Proposal:

Towards Collaboration Organization

Proposal: Towards DRD1 Organization (I)

DRD1 Management: ***- 2 Spokespersons, CB Chair, CB Deputy Chair(s), CB/MB Secretary,***
- Technical Coordinator, Resource Coordinator,
- Overall WG Coordinator, Overall WP Coordinator
- Collaboration Board, Management Board, Science Coordination Board, Finance Board

- Spokesperson: **CB-elected (EO, MT) - 2-years term; future elections – 2 OR 3-years term**

***- CB Chair*:** **CB-elected (AC) - 2-years term; future elections – 2 OR 3-years term**

- CB Deputy Chair(s) & CB Secretary: **appointed by the CB Chair, subject to MB/CB endorsement**

- Technical Coordinator: **nominated by Spokespersons, subject to MB/CB endorsement/approval, in agreement with CERN Management**
Mandate: **Responsible for DRD1 Common Assets (Tools, Facilities & Infrastructure),**

- Finance Coordinator: **nominated by Spokespersons & CB Chair, subject to MB/CB endorsement/approval, in agreement with CERN Management**
Mandate: **Responsible for DRD1 Accounts and Funds @ CERN**
Report to CB and prepare the yearly based CERN Financial Review

Proposal: Towards DRD1 Organization (II)

- ***Collaboration Board (1 representative per research institute)*** **+ ex-officio (SPs, CB Chair/Deputy, CB/MB Secretary, Overall WG & WP Coordinators, Technical Coordinator, Finance Coordinator)**

  Mandate: **policy and decision making body of the DRD1 Collaboration**

- ***Management Board (~ 20 people):*** **CB-wide elected members (MPGD, RPC, WIRE, …), SPs, CB Chair/ Deputy, CB/MB Secretary, Overall WG & WP Coordinators, Technical & Finance Coordinators**

  Moderated by the Spokespersons

  Objective: **fair representation of all DRD1 detector communities, geographical regions, including diversity aspects (e.g. young researchers), coordination body among gas detector technologies, including Common fund issues**

  Mandate: **oversee *strategic implementation of the DRD1 collaboration priorities* (in achieving and complying with established scientific goals and FA policies); *ensure « GLOBAL » nature* of the DRD1 activities; *develop future DRD1 strategy* for common technology developments & assets, as an input for the CB discussions & approval**

  - Election procedure and/or rules to define MB representation/composition needs to be defined.

- ***DRD1 Finance Board (not CERN RRB):*** **FA-nominated representatives, WP Coordinators + ex-officio (SPs, CB Chair/Deputy, Overall WG Coordinators, Technical Coordinator, Finance Coordinator)**

  Mandate: - initiate / prolong / terminate WPs (on request of MB & SCB);

  - participate in preparation of CERN RRB Financial Reviews

Proposal: Towards DRD1 Organization (III)

- ***Scientific Coordination Board (~ 30 people):*** **Overall WG & WP Coordinators, WG Conveners, WP Coordinators + SPs, CB Chair/Deputy, Technical Coordinator, Finance Coordinator**

  - ***Moderated by Co-Chairs (Overall WP Coordinator & Overall WG Coordinator)***
  - ***Overall WP Coordinator:*** ***nominated by Spokespersons, subject to MB/CB approval***
    Mandate: ***Oversee WP Implementation and Execution,***
  - ***Overall WG Coordinator:*** ***nominated by Spokespersons, subject to MB/CB approval***
    Mandate: ***Oversee WG activities (also in-charge of Common Projects)***

  WG Conveners (several per WG, few years mandate): **nominated by SPs; subject to MB/CB endorsement**
  WP Coordinators: **proposed by CB representatives participating in WP; subject to MB/CB endorsement**
  Mandate: Execute DRD1 Core Scientific Program **(as defined by the DRD1 Management & MB/CB & FA)**

- ***Regular meetings of extended MB (MB + Scientific Coordination Board) will be envisaged;***

- ***We propose to extend the current mandate of the WG & WP Coordinators until June 2024 DRD1 meeting. Once consultations with community & representatives of different gas detector technologies will converge, we will ask for CB approval for the MB & Science Coordination Board Membership, and updated list of WG Conveners & WP Coordinators***

Constitution (Bullets)

The DRD1 Constitution

Establishing a guiding framework to shape our collaboration

- ✓ Serves as a guiding document, embodying shared and best practices that form the foundations of our collaboration.
- ✓ It is a collective commitment, promoting transparency, effective collaboration, and a dynamic exchange of ideas.
- ✓ encapsulates the essence of how we work together, make decisions, define the common objective, collaborative policies.

Consists of :

- Few articles describing the goal of Collaboration, fair representation, in compliance with established scientific goals and policies.
- list of annexes: outlines the roles and responsibilities of each body, including mandates, nominations, procedures
- it refers to MoU for specific articles related to agreements signed between institutions and DRD1.

The first draft of DRD1 constitution is currently under preparation:

- It will serve in preparation of the MoU
- the community will be regularly consulted, and the text will be updated accordingly
- goal of DRD1 constitution approval during the next Collaboration Board (CB) meeting in June 2024

Note: it is a living document. Document can be updated, improved, or amended by the CB, and unforeseen issues can be submitted for consideration.

The DRD1 Constitution: outline

DRAFT

Organization and Objectives

- DRD1 organization's objectives:

Management Structure

- Key positions within DRD1 Management

Organizational Governance

- Decision-making by consensus
- Solving controversies
- Voting by CB in the absence of consensus
- Boards and structures

Publications and Conference Contributions

Appointment and Terms

- Terms for all MB positions, coordinators/conveners.
- Search committee and selection procedures
- Rotation for diversity and dynamic composition.

Meetings

- Collaboration meetings frequency, agenda preparation and approval; presentation and sharing of the materials, Minutes distribution and approval

The DRD1 Constitution: outline

DRAFT

Annex 1: Collaboration Board (CB)

- Composition and roles.
- Decision-making framework.
- CB Chairperson nomination and election
- Advisory Group.

Annex 2: Management Board (MB)

- Composition and responsibilities.
- Spokespersons nomination and election.

Annex 3: Resource Board (RB)

- Composition and responsibilities towards Funding Agencies
- Explain the oversight role in Work Package and Common Fund.
- Resource Coordinator nomination and election

Annex 4: Scientific Coordination Board (SCB)

- Composition and roles as cross-coordination among different boards in overseeing DRD1's scientific programs.
- Moderators/chair of the SCB

Annex 5: Working Groups (WGs)

- Coordination, objectives, and roles of WGs.
- WG Conveners
- Overall WGs Coordinator.
- WG Conveners and Overall WGs coordinator nomination and election

The DRD1 Constitution: outline

DRAFT

Annex 6: Work Packages (WPs)

- Role of WPs in consolidating institute activities.
- Outline the funding and approval process for WPs.
- Detail the establishment of a new WP and the roles of WP Coordinators and Overall WP Coordinator.

Annex 7: Glimos

- role of GLIMOS in matters of safety.
- Detail the appointment process and term.

Annex 8: Technical Coordination

- Outline the role and responsibilities of the Technical Coordinator.
- Detail the appointment process and term.

Annex 9: Common Projects

- Provide an overview of Common Projects and their funding opportunities.
- evaluation and approval process.
- Detail the financial/administrative rules for DRD1 Common Projects.

Annex 11: Membership and MoU

- Discuss the definition of membership and the involvement of Funding Agencies.
- Highlight the obligations and benefits for members as reported in MoU

MoU

DRD1 MoU

First DRD1 MoU template to be released by CERN and it is expected in the upcoming weeks.

We expect:

- ***Light-weighted MoU with funding for "strategic R&D" (WPs) in Annexes/Addendums***
- ***Annex must allow for different financing schemes for different funding agencies (may be different among DRD collaborations)***

DRD1 MoU

While waiting for the CERN template, we started to work on the basis of the RD51 MoU (some parts will be surely match)

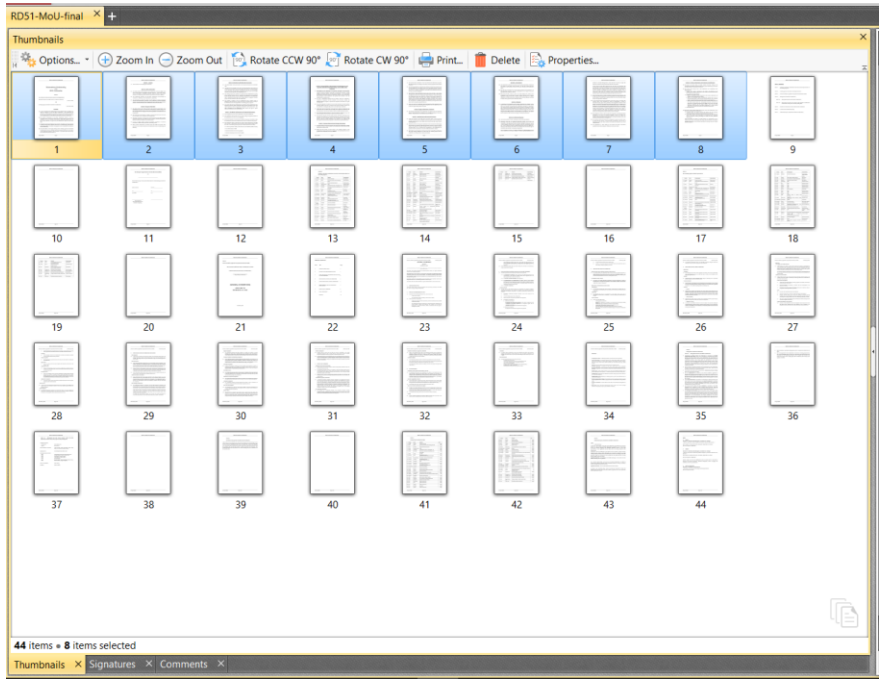
The RD51 MoU is available and public :
https://rd51-public.web.cern.ch/sites/default/files/documents/RD51-MoU-final.pdf

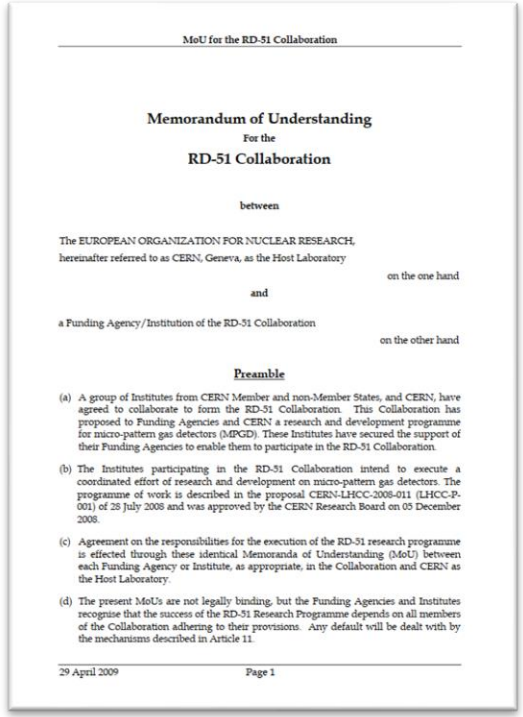
A short description on the next slides to guide you through if you are interested.

See also H. Taureg Contribution at the March 2023 DRD1 Community Meeting:
https://indico.cern.ch/event/1245751/contributions/5286569/attachments/2603229/4495477/DRD1%20MoU%20presentation.pptx

MoU, Preamble and Articles

Static Core: What most likely will stay untouched.





MoU for the RD-51 Collaboration

Memorandum of Understanding
For the
RD-51 Collaboration

between

The EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH,
hereinafter referred to as CERN, Geneva, as the Host Laboratory
on the one hand

and

a Funding Agency/Institution of the RD-51 Collaboration
on the other hand

Preamble

(a) A group of Institutes from CERN Member and non-Member States, and CERN, have agreed to collaborate to form the RD-51 Collaboration. This Collaboration has proposed to Funding Agencies and CERN a research and development programme for micro-pattern gas detectors (MPGD). These Institutes have secured the support of their Funding Agencies to enable them to participate in the RD-51 Collaboration.

(b) The Institutes participating in the RD-51 Collaboration intend to execute a coordinated effort of research and development on micro-pattern gas detectors. The programme of work is described in the proposal CERN-LHCC-2008-011 (LHCC-P-001) of 28 July 2008 and was approved by the CERN Research Board on 05 December 2008.

(c) Agreement on the responsibilities for the execution of the RD-51 research programme is effected through these identical Memoranda of Understanding (MoU) between each Funding Agency or Institute, as appropriate, in the Collaboration and CERN as the Host Laboratory.

(d) The present MoUs are not legally binding, but the Funding Agencies and Institutes recognise that the success of the RD-51 Research Programme depends on all members of the Collaboration adhering to their provisions. Any default will be dealt with by the mechanisms described in Article 11.

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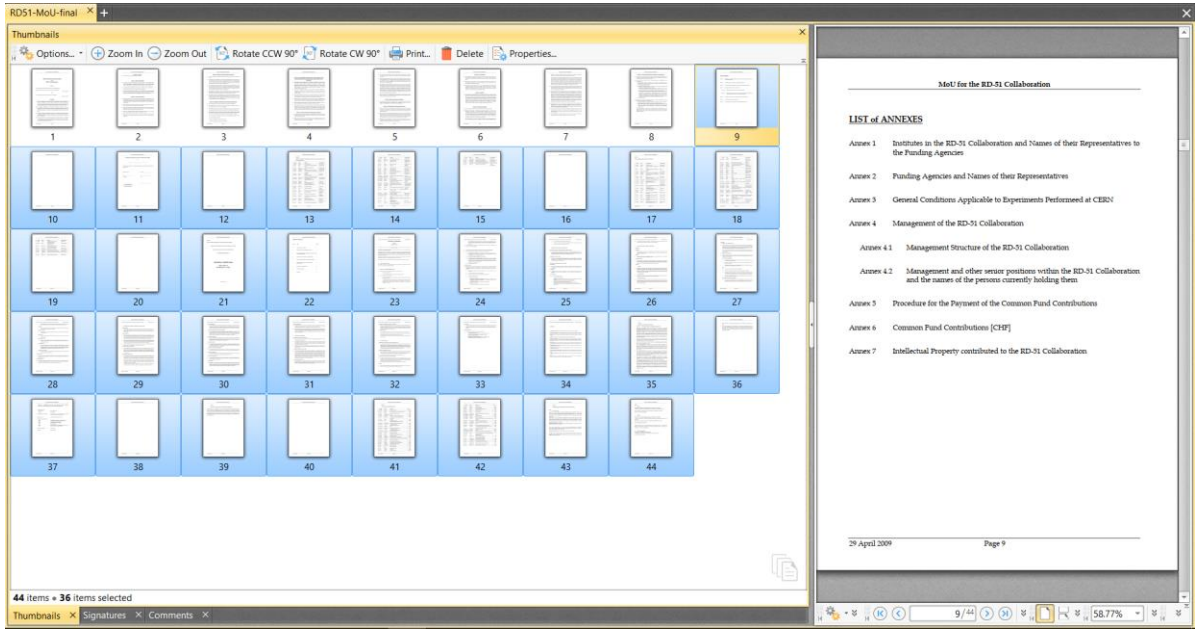
RD51 MoU for reference

- ***Preamble***
- ***Article 1 : Annexes***
- ***Article 2 : Parties to this MoU***
- ***Article 3 : Purpose of this MoU***
- ***Article 4 : Duration of this MoU and its Extension***
- ***Article 5 : The RD-51 Collaboration and Common Infrastructure***
- ***Article 6 : Responsibilities of the Institutes for the Maintenance and Operation of the RD-51-Test Beam Facility, and of CERN as Host Laboratory***
- ***Article 7 : Common Fund and Cost Sharing & Procedures***
- ***Article 8 : Rights and Benefits of Institutes***
- ***Article 9 : Administrative and Financial Provisions***
- ***Article 10 : Amendments***
- ***Article 11 : Disputes***
- ***Article 12 : Intellectual Property***
- ***Article 13 : Theses, Publications and Conference Contributions***

MoU & Annexes

Parts that will have to be updated regularly



RD51 MoU for reference

LIST of ANNEXES

Annex 1 Institutes & Representatives

Annex 2 Funding Agencies and Representatives

Annex 3 General Conditions Applicable to Experiments Performed at CERN

Annex 4 Management (structure and names)

Annex 5 Common Fund Contributions

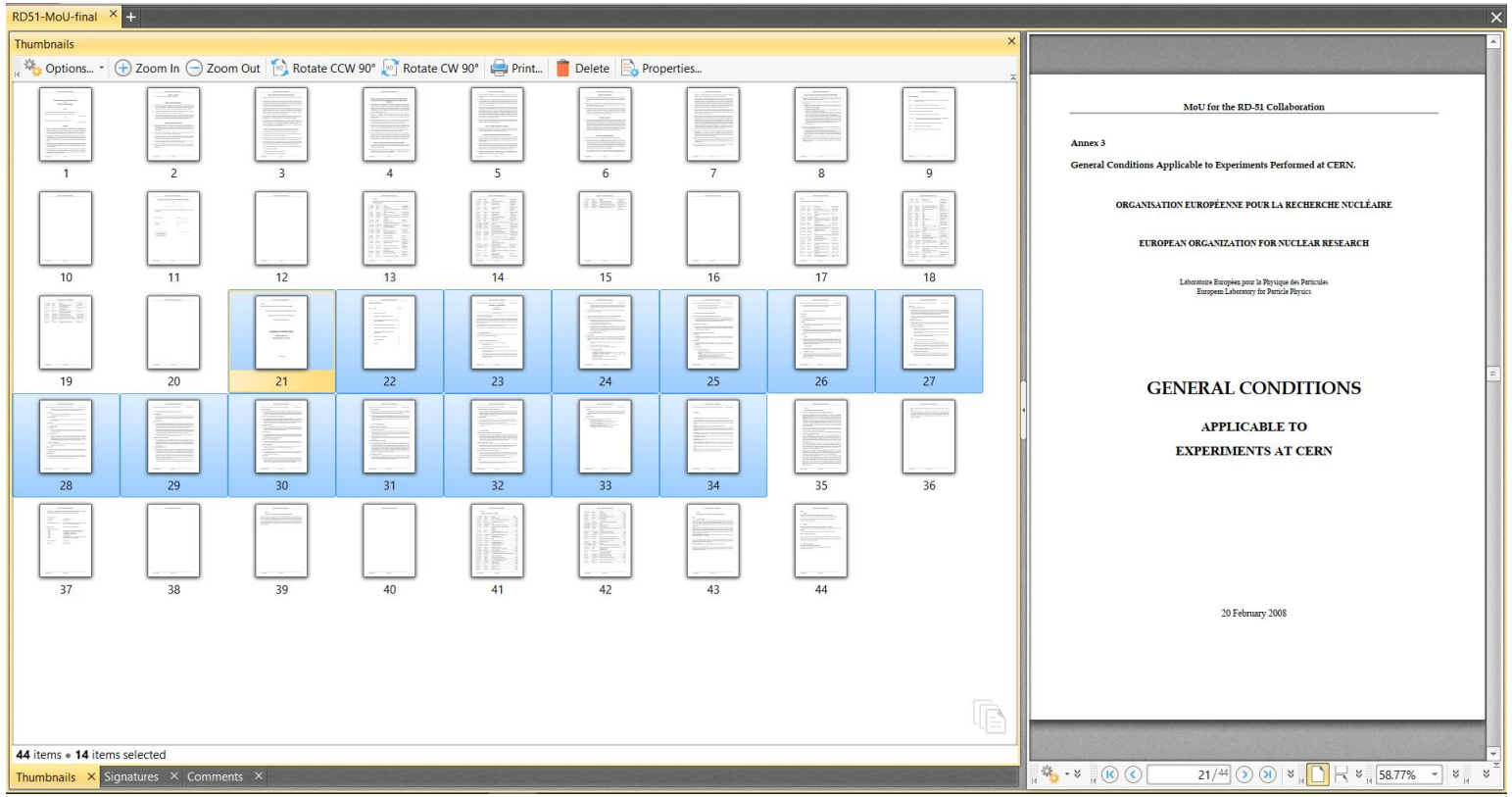
Annex 6 Common Fund Contributions [Table]

Annex 7 Intellectual Property

To grant flexibility, Work Packages will appear as annexes to be able to add or remove them without the need of the MoU signature

MoU & CERN General Conditions

General Conditions Applicable to Experiments Performed at CERN

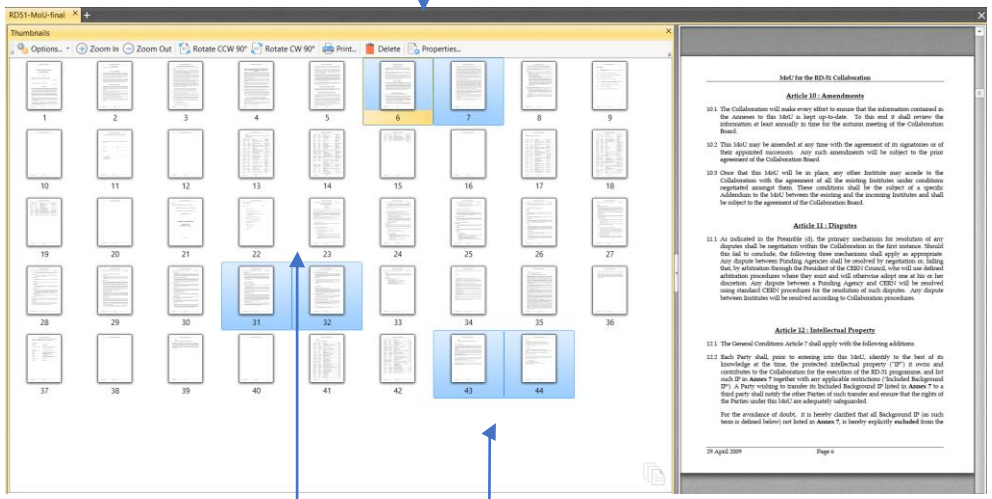


Latest version: https://cds.cern.ch/record/2728154/files/General-Conditions_CERN_experiments.pdf

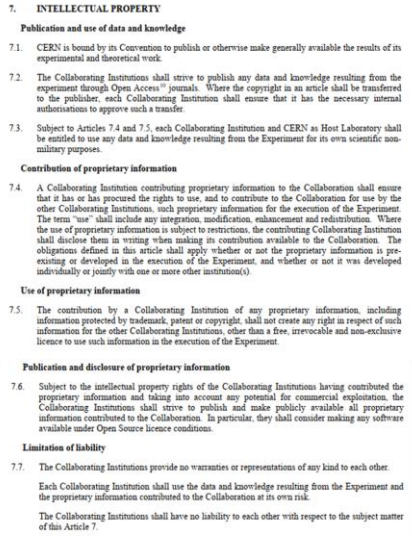
MoU & Intellectual Property

RD51 General Conditions & Foreground IP

RD51 MoU for reference



CERN General Condition



7. INTELLECTUAL PROPERTY

Publication and use of data and knowledge

7.1. CERN is bound by its Convention to publish or otherwise make generally available the results of its experimental and theoretical work.

7.2. The Collaborating Institutions shall strive to publish any data and knowledge resulting from the experiment through Open Access[10] journals. Where the copyright in an article shall be transferred to the publisher, each Collaborating Institution shall ensure that it has the necessary internal authorisations to approve such a transfer.

7.3. Subject to Articles 7.4 and 7.5, each Collaborating Institution and CERN as Host Laboratory shall be entitled to use any data and knowledge resulting from the Experiment for its own scientific non-military purposes.

Contribution of proprietary information

7.4. A Collaborating Institution contributing proprietary information to the Collaboration shall ensure that it has or has procured the rights to use, and to contribute to the Collaboration for use by the other Collaborating Institutions, such proprietary information for the execution of the Experiment. The term "use" shall include any integration, modification, enhancement and redistribution. Where the use of proprietary information is subject to restrictions, the contributing Collaborating Institution shall disclose them in writing when making its contribution available to the Collaboration. The obligations defined in this article shall apply whether or not the proprietary information is pre-existing or developed in the execution of the Experiment, and whether or not it was developed individually or jointly with one or more other institution(s).

Use of proprietary information

7.5. The contribution by a Collaborating Institution of any proprietary information, including information protected by trademark, patent or copyright, shall not create any right in respect of such information for the other Collaborating Institutions, other than a free, irrevocable and non-exclusive licence to use such information in the execution of the Experiment.

Publication and disclosure of proprietary information

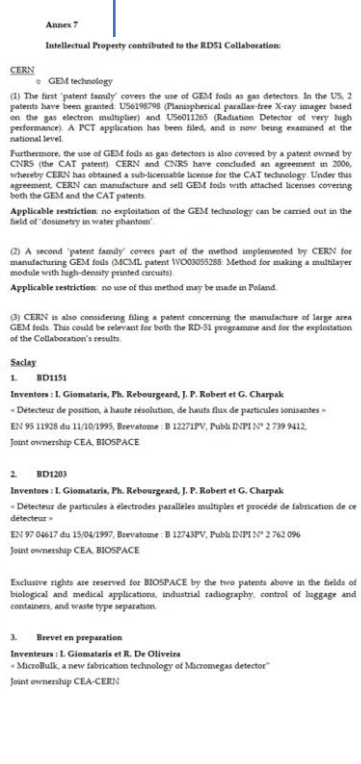
7.6. Subject to the intellectual property rights of the Collaborating Institutions having contributed the proprietary information and taking into account any potential for commercial exploitation, the Collaborating Institutions shall strive to publish and make publicly available all proprietary information contributed to the Collaboration. In particular, they shall consider making any software available under Open Source licence conditions.

Limitation of liability

7.7. The Collaborating Institutions provide no warranties or representations of any kind to each other.

Each Collaborating Institution shall use the data and knowledge resulting from the Experiment and the proprietary information contributed to the Collaboration at its own risk.

The Collaborating Institutions shall have no liability to each other with respect to the subject matter of this Article 7.



Annex 7

Intellectual Property contributed to the RD51 Collaboration:

CERN

- GEM technology

(1) The first 'patent family' covers the use of GEM foils as gas detectors. In the US, 2 patents have been granted: US6198798 (Planispherical parallax-free X-ray imager based on the gas electron multiplier) and US6011265 (Radiation Detector of very high performance). A PCT application has been filed, and is now being examined at the national level.

Furthermore, the use of GEM foils as gas detectors is also covered by a patent owned by CNRS (the CAT patent). CERN and CNRS have concluded an agreement in 2006, whereby CERN has obtained a sub-licensable license for the CAT technology. Under this agreement, CERN can manufacture and sell GEM foils with attached licenses covering both the GEM and the CAT patents.

Applicable restriction: no exploitation of the GEM technology can be carried out in the field of 'dosimetry in water phantom'.

(2) A second 'patent family' covers part of the method implemented by CERN for manufacturing GEM foils (bMCML patent WO03055288: Method for making a multilayer module with high-density printed circuits).

Applicable restriction: no use of this method may be made in Poland.

(3) CERN is also considering filing a patent concerning the manufacture of large area GEM foils. This could be relevant for both the RD-51 programme and for the exploitation of the Collaboration's results.

Saclay

1. BD1151

Inventors : I. Giomataris, Ph. Rebourgeard, J. P. Robert et G. Charpak

« Détecteur de position, à haute résolution, de hauts flux de particules ionisantes »

EN 95 11928 du 11/10/1995, Brevatome : B 12271PV, Publi INPI N° 2 739 9412,

Joint ownership CEA, BIOSPACE

2. BD1203

Inventors : I. Giomataris, Ph. Rebourgeard, J. P. Robert et G. Charpak

« Détecteur de particules à électrodes parallèles multiples et procédé de fabrication de ce détecteur »

EN 97 04617 du 15/04/1997, Brevatome : B 12743PV, Publi INPI N° 2 762 096

Joint ownership CEA, BIOSPACE

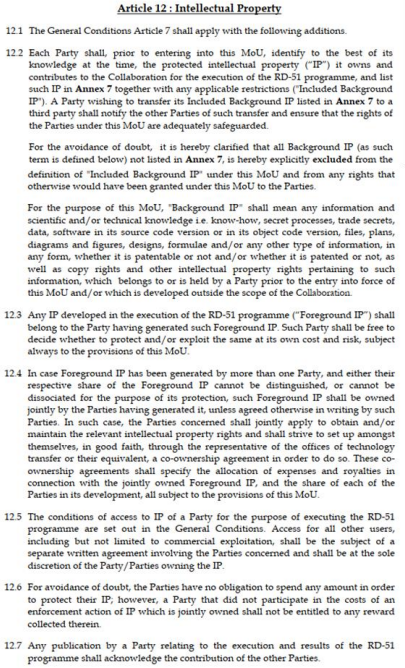
Exclusive rights are reserved for BIOSPACE by the two patents above in the fields of biological and medical applications, industrial radiography, control of luggage and containers, and waste type separation.

3. Brevet en preparation

Inventeurs : I. Giomataris et R. De Oliveira

« MicroBulk, a new fabrication technology of Micromegas detector"

Joint ownership CEA-CERN



Article 12 : Intellectual Property

12.1 The General Conditions Article 7 shall apply with the following additions.

12.2 Each Party shall, prior to entering into this MoU, identify to the best of its knowledge at the time, the protected intellectual property ("IP") it owns and contributes to the Collaboration for the execution of the RD-51 programme, and list such IP in **Annex 7** together with any applicable restrictions ("Included Background IP"). A Party wishing to transfer its Included Background IP listed in **Annex 7** to a third party shall notify the other Parties of such transfer and ensure that the rights of the Parties under this MoU are adequately safeguarded.

For the avoidance of doubt, it is hereby clarified that all Background IP (as such term is defined below) not listed in **Annex 7**, is hereby explicitly **excluded** from the definition of "Included Background IP" under this MoU and from any rights that otherwise would have been granted under this MoU to the Parties.

For the purpose of this MoU, "Background IP" shall mean any information and scientific and/or technical knowledge i.e. know-how, secret processes, trade secrets, data, software in its source code version or in its object code version, files, plans, diagrams and figures, designs, formulae and/or any other type of information, in any form, whether it is patentable or not and/or whether it is patented or not, as well as copy rights and other intellectual property rights pertaining to such information, which belongs to or is held by a Party prior to the entry into force of this MoU and/or which is developed outside the scope of the Collaboration.

12.3 Any IP developed in the execution of the RD-51 programme ("Foreground IP") shall belong to the Party having generated such Foreground IP. Such Party shall be free to decide whether to protect and/or exploit the same at its own cost and risk, subject always to the provisions of this MoU.

12.4 In case Foreground IP has been generated by more than one Party, and either their respective share of the Foreground IP cannot be distinguished, or cannot be dissociated for the purpose of its protection, such Foreground IP shall be owned jointly by the Parties having generated it, unless agreed otherwise in writing by such Parties. In such case, the Parties concerned shall jointly apply to obtain and/or maintain the relevant intellectual property rights and shall strive to set up amongst themselves, in good faith, through the representative of the offices of technology transfer or their equivalent, a co-ownership agreement in order to do so. These co-ownership agreements shall specify the allocation of expenses and royalties in connection with the jointly owned Foreground IP, and the share of each of the Parties in its development, all subject to the provisions of this MoU.

12.5 The conditions of access to IP of a Party for the purpose of executing the RD-51 programme are set out in the General Conditions. Access for all other users, including but not limited to commercial exploitation, shall be the subject of a separate written agreement involving the Parties concerned and shall be at the sole discretion of the Party/Parties owning the IP.

12.6 For avoidance of doubt, the Parties have no obligation to spend any amount in order to protect their IP; however, a Party that did not participate in the costs of an enforcement action of IP which is jointly owned shall not be entitled to any reward collected therein.

12.7 Any publication by a Party relating to the execution and results of the RD-51 programme shall acknowledge the contribution of the other Parties.

Intellectual Property: if this part is relevant for your group, please have a look to what was present in the RD51 MoU and reach us back if there are uncovered parts or something you would like to change.

KEEP IN MIND THAT FOR DRDS THE IP PART WILL BE MODIFIED.

MoU & Common Funds

Common funds will be covered in Articles and Annexes

The use of Common Funds is decided by the CB.

In RD51 (3kCHF/y per group) used to support scientific activities that are of interest of the collaboration, common investments, developments, infrastructures, facilities and services, co-ordination and administrative costs.

From: Detector R&D Committee, Draft Minutes of the first meeting held on Monday, 4 December 2023

The DRDC **suggests** that all DRDs consider the implementation of a modest Common Fund (CF) contribution to be paid annually by institutes joining the collaboration. Examples of items that could be covered by a CF: possible administrative costs if not covered elsewhere; collaboration-wide costs; small blue-sky high-risk projects.

https://cds.cern.ch/record/2883179/files/DRDC-M-001.pdf

General topics not explicitly discussed elsewhere in the agenda

Activities and possibilities for the collaboration and its members

Covering topics that will not be explicitly discussed elsewhere in the agenda but that it is useful to touch in view of the setting up of the DRD1 activities:

- ***Collaboration Meetings***
- ***Common Projects***
- ***Publication Policy and Collaboration Notes***
- ***CERN Affiliation***
- ***IT resources***

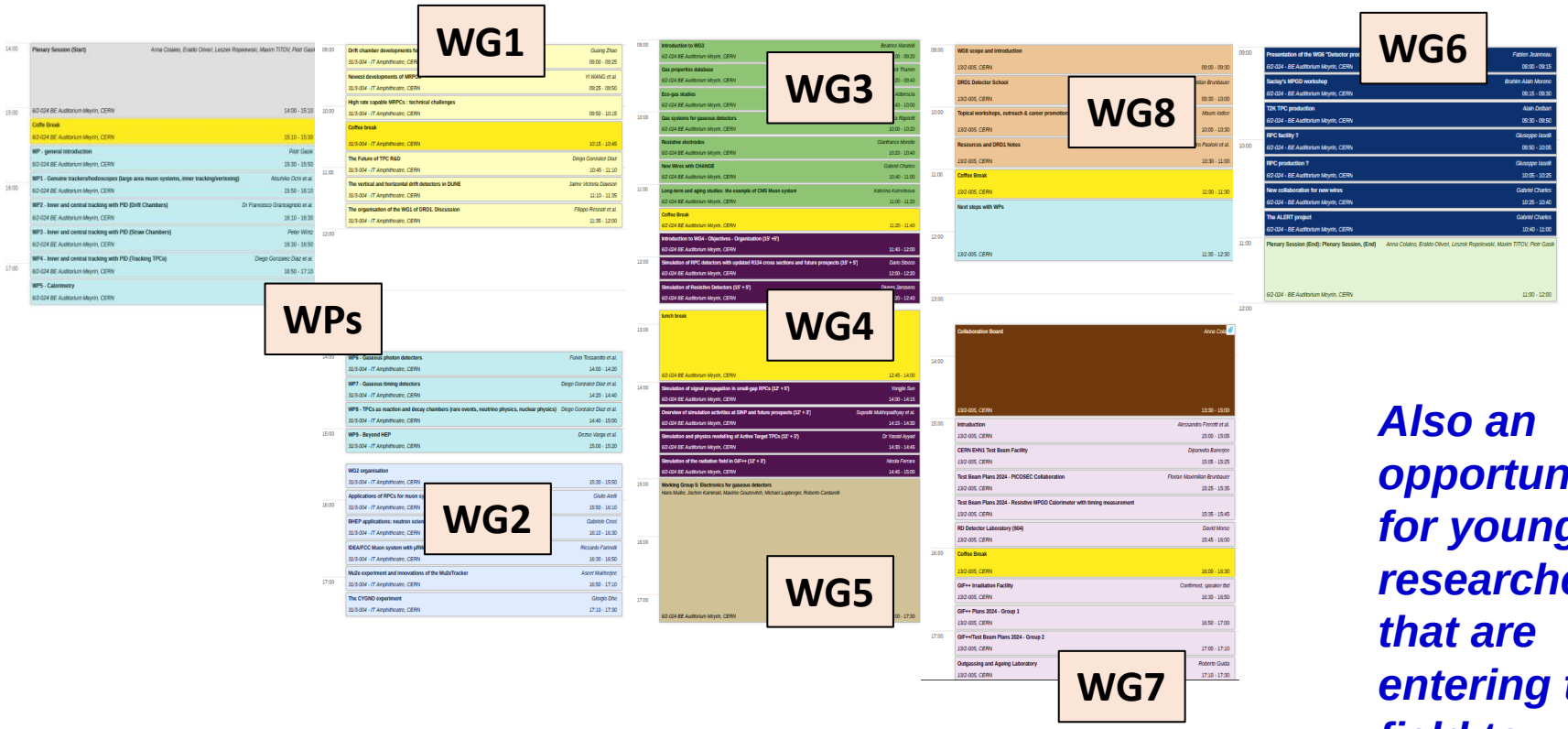
Work Packages and Working Groups Sessions will cover the core of the DRD1 collaborative activities and will provide you the full set of possibility within DRD1

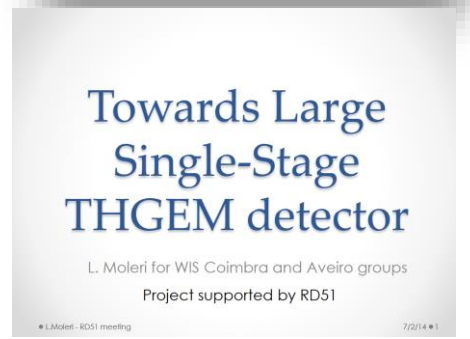
Collaboration Meetings

Collaboration Meetings (in RD51)

In RD51, Three Meetings per year, one of the three outside CERN

Conveners calling for contributions and groups answering to the call and presenting their research work





Also an opportunity for young researchers that are entering the field to present their work

As reference

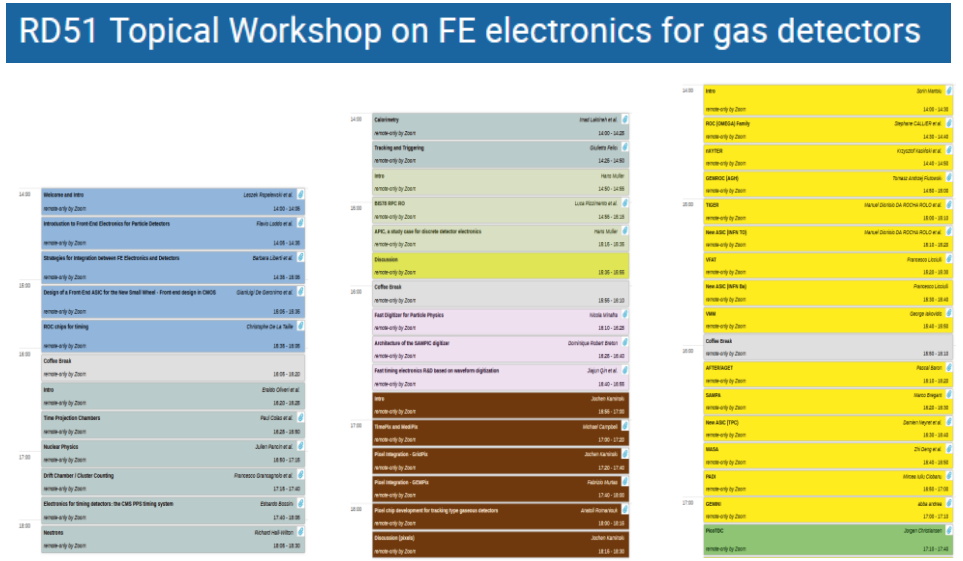
https://rd51-public.web.cern.ch/meetings-collaborationmeetings
https://rd51-public.web.cern.ch/meetings-miniweeks

Enriched with Topical workshop that can open to other communities

https://indico.cern.ch/event/525268/

https://indico.cern.ch/event/889369/overview

https://indico.cern.ch/event/709670/



https://indico.cern.ch/event/1051087/

And eventually special events… (in RD51, Academia/Industry)

Academia-Industry Matching Event
Special Workshop on Neutron Detection with MPGDs

14-15 October 2013
CERN

Neutron Detection 1st

Prospects in MPGDs development for neutron detection

Bruno Guerard (ILL), Richard Hall-Wilton (ESS), Fabrizio Murtas (INFN & CERN)

Summary based on presentations during RD51
Academia-Industry Matching Event, CERN October 14-15, 2013
RD51-NOTE-2014-003

Introduction

The market of neutron detectors has increased significantly during the last decade in two domains: instrumentation for Neutron Scattering Science, and prevention against nuclear terrorism. Before the emerging of the so-called "^{3}He shortage crisis", detection systems used in portal monitors to detect fissile elements were based mainly on ^{3}He proportional counters, whereas linear ^{3}He PSDs (Position Sensitive Detectors), ^{3}He MWPCs, and ^{6}Li scintillators were the most current techniques for scientific applications. Two large-scale neutron facilities, SNS in the US and J-PARC in Japan, have recently started their operation, and the future ESS (European Spallation Source) will produce first neutrons in 2019-2020. Detectors with better performance are urgently needed to take full benefit of the high intensity neutron beams produced by these sources. An additional constraint comes from the fact that the volume of ^{3}He available is by far insufficient to cope with the demand for large area detectors, and the cost of this gas has increased considerably.

Compared to Multi Wires Proportional Chambers (MWPC), Micro-Pattern Gas Detectors (MPGD) used in HEP to detect MIPs offer better spatial resolution, counting rate capability, and radiation hardness; their fabrication is also more reproducible. Provided similar advantages are applicable to detect neutrons, MPGDs might contribute significantly to the development of neutron scientific instrumentation. In order to evaluate the prospects of neutron MPGDs, it is worth knowing the applications which would benefit from a gain in performance, and if they offer a competitive alternative to conventional ^{3}He detectors. These questions have been at the focus of the workshop "Neutron Detection with Micro-Pattern Gaseous Detectors" organized by RD51 in collaboration with HEPTech, which took place at CERN on October 14-15, 2013. The goal of this workshop was to help disseminating MPGD technologies beyond High Energy Physics, and to give the possibility to academic institutions, potential users and industry to meet together. 26 speakers gave presentations on the following topics:

https://indico.cern.ch/event/265187/

Summary(arXiv 1410.1070)

Academia-Industry Matching Event
Second Special Workshop on Neutron Detection with MPGDs

16-17 March 2015
CERN

Neutron Detection 2nd

Dear Colleagues,

In continuity with the first Academia-Industry Matching event dedicated to neutron MPGDs (Micro-Pattern Gas Detectors), organized the 14-15 October 2013 at CERN, the RD51 collaboration will organise the
Second Academia-Industry Matching event dedicated to neutron MPGDs
Date: 16-17 march 2015
Location : CERN
Additional information is available on this page: https://indico.cern.ch/event/365840/page/0
This event provides a platform for discussing prospects of the MPGDs use for the thermal and fast neutron detection, commercial requirements and possible solutions. It aims to foster collaboration between the particle physics community and the users and fabricants of neutron detectors, and to discuss the potential of the MPGD technologies for th
The topics to be covered are :
- Academic and Industrial Applications
- GEM, Micromegas and other MPGD neutron detecto
- Neutron Converters
- Simulations and Performance
- Electronics
The Neutron Scattering Community was well represen
will be also the case for the second one. We believe tha
the HEP community in order to broaden the develop
strongly encourage you to participate, to present your
pare to the discussion during the round table which w
presentation does not necessarily have to be focused o
challenges (for example, ^{3}He alternative, high spacial
Short presentation (5-10 min) are foreseen to introduc
are we with the ^{3}He shortage ?", "future detector need
We would appreciate if you would like to propose topi
Please send us your abstract, 10-20 lines max, before t
present some results or a subject to be discussed at th
The detailed program will be available at the beginnin
You can see the presentations of the first workshop he
and a summary is available here: http://arxiv.org/abs/

Starts 16 Mar 2015 10:00
Ends 17 Mar 2015 19:05
Europe/Zurich

https://indico.cern.ch/event/365840/

Press release

HEPTech

PRESS RELEASE

Research in Micro-Pattern Gaseous Detector-Related Technologies and Applications Attracts Larger and Smaller Industrial Players

The RD51 collaboration event dedicated to neutron detection with MPGDs (Micro-Pattern Gas Detectors), held at CERN on March 16th - 17th, 2015, brought together prominent representatives of the particle physics community as well as already established and relatively young industrial players in the field of neutron detectors.

The aim of the event was to help disseminating MPGD technologies beyond fundamental physics, where academic institutions, potential users and industry could meet together.

The shortage of Helium-3 in the world brings new challenges to neutron detection, especially in the areas of homeland security, non-proliferation, neutron scattering science and other fields. Micro-Pattern Gas Detectors offer attractive alternative solutions for neutron detection, complementing Helium-3 based proportional counters. The event provided a platform for discussion of the prospects of the MPGD use for thermal and fast neutron detection, commercial requirements and possible solutions.

It was organised jointly by HEPTech and RD51 Collaboration at CERN as a follow-up of a similar event that took place in October, 2013. "Our cooperation with HEPTech has already a long history", says Dr. Maxim Titov from CEA Saclay/Irfu, co-spokesperson of the RD51 Collaboration, together with Leszek Ropelewski from CERN.

RD51 is a technology based collaboration which addresses the technological development of Micro-pattern gas detectors. MPGDs are not only used in LHC experiments but also in numerous applications outside the high energy physics. The RD51 was created in 2008 and in 2013 it was approved for another 5-year term. The organization of such academia-industry matching events (AIMEs), disseminating MPGD applications beyond fundamental physics, was one of the major new activities when the continuation of the RD51 programme was discussed. "As a key point of being a technological collaboration, for us it was very important somehow to link our collaboration to potential users and industrial companies that might be

1

RD51 Academia-Industry Matching Event
Special Workshop on Photon Detection with MPGDs

10-11 June 2015
CERN

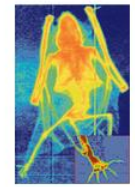
Photon Detection

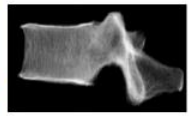
The specialized workshop "Photon detection with Micro-Pattern Gaseous Detectors" organised by RD51 in collaboration with HEPTech, will take place at CERN on June 10-11, 2015.

The goal of the workshop is to help disseminating MPGD technologies beyond fundamental physics, where academic institutions, potential users and industry could meet together.

This workshop aims to foster collaboration between the particle physics community and the industry of photon detection, and to discuss the potential of the MPGD technologies for the field. This event is jointly organized by the RD51 collaboration, the HEPTech Network and CERN KT Group. It is open to all researchers and commercial partners interested or working in the field of photon detection.

Dates: 10th and 11th June 2015
Venue: The Council Chamber, CERN
Route de Meyrin 385, 1217 Meyrin





https://indico.cern.ch/event/392833/

Common Projects

Refer to Atsuhiko Ochi Presentation at the March 2023 DRD1 Community Meeting:

https://indico.cern.ch/event/1245751/contributions/5286570/attachments/2603392/4495797/RD51_CP_230301_v2.pdf

RD51 Common Projects

In RD51 Common Project Funding was intended to support a project cost in the areas of common interest to the RD51/MPGD community

- ***Technology R&D projects towards developments of novel techniques, improvements of existing technologies, characterization methods and dedicated tools;***
- ***Development and optimization of MPGDs for novel applications;***
- ***Improvement of the MPGD technology transfer to industry.***
- ***The program will fund only generic projects – not ones related to experiments.***

Transversal collaborations among groups from different countries, experiments, physics areas of interest encouraged and supported by RD51

Year	Title	Contact person
2011	A low mass microbulk with real XY strips structure	Theo Geralis
	MPGDs technology laboratory for training, development, fabrication, applications and innovation	Rafael Gutierrez
	Thin and high-pitch laser-etched mesh manufacturing and bulking	Paul Colas
	Development of innovative resistive GEM alpha detectors for earthquakes	Guy Paic
	Large-area THGEM detector evaluation with SRS electronics	Amos Breskin
2012	R&D on large area GEMs for the ALICE TPC upgrade	Chilo Garabatos Cuadrado
	High resolution UV scanner for MPGD applications	Dezso Varga
2014	Measurement and calculation of ion mobility of some gas mixtures of interest	Chilo Garabatos
	Fast Timing for High-Rate Environments: A Micromegas Solution	Sebastian White
	Development of a novel Micro Pattern Gaseous Detector for Cosmic Ray Muon Tomography	Paolo Iengo
2016	Sampling Calorimetry with Resistive Anode MPGDs (SCREAM)	Maximilien Chedeville
	New Scintillating gases and structures for next-generation scintillation-based gaseous detector	Diego Gonzalez Diaz
2017	Development of modular multilayer GEM units	Alexander Milov
2018	Modular & General purpose Ultra Low Mass GEM Based Beam Monitors	Gabriele Croci
	DLC based electrodes for future resistive MPGDs	Yi Zhou
	Study of negative ion mobility and ion diffusion for Negative Ion TPCs	André Cortez
2019	Discharge Consortium in quest for Spark-Less-Avalanche-Microstructures	Piotr Gasik
	Pixelated resistive bulk Micromegas with integrated electronics	Fabrizio Petrucci
	Resistive materials and resistive-MPGD concepts & technologies	Shikma Bressler
2020	Optical readout studies for negative ion TPCs	Florian M. Brunbauer
	Large area high-granularity segmented mesh microbulk forfuture rare event searches	Javier Galan
2021	Comprehensive studies of the glass, ceramic- and kapton-THGEMs in high- and low-pressure TPCs	Pawel Majewski
	Development for Resistive MPGD Calorimeter with timing measurement	Piet Verwillligen
2022	Study of MPGD performance in liquefied noble gases	Vitaly Chepel

RD51 Common Projects (examples)

Study of MPGD performance in liquefied noble gases (2022)

RD51 Institutes:

1. LIP-Coimbra, Vitaly Chepel, vitaly@uc.pt
2. Weizmann Institute of Science, Amos Breskin, amos.breskin@weizmann.ac.il and Shikma Bressler, shikma.bressler@weizmann.ac.il
3.. LIBPhys-University of Coimbra, Joaquim Marques Ferreira dos Santos, jmf@uc.pt, Fernando Domingues Amaro, famaro@uc.pt and Cristina Maria Bernardes Monteiro, cristinam@uc.pt

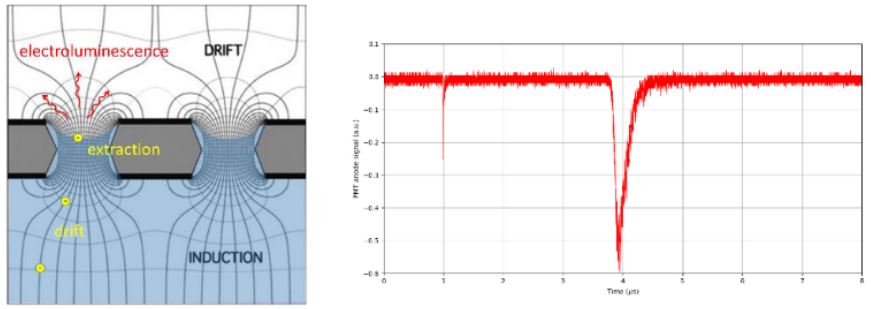


Figure 1. A double-phase TPC with a floating THGEM. (Left) – the principle; (Right) – preliminary results with a 0.4 mm thick THGEM, 0.3 mm holes and 1 mm pitch in liquid xenon. The ionization (in the liquid) is due to alpha-particles; the VUV photons are detected with a PMT. A fast pulse at $t = 1$ μs, corresponding to primary scintillation in the liquid, is followed by the secondary scintillation in gas.

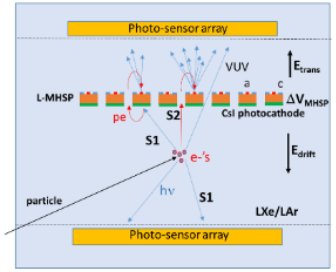


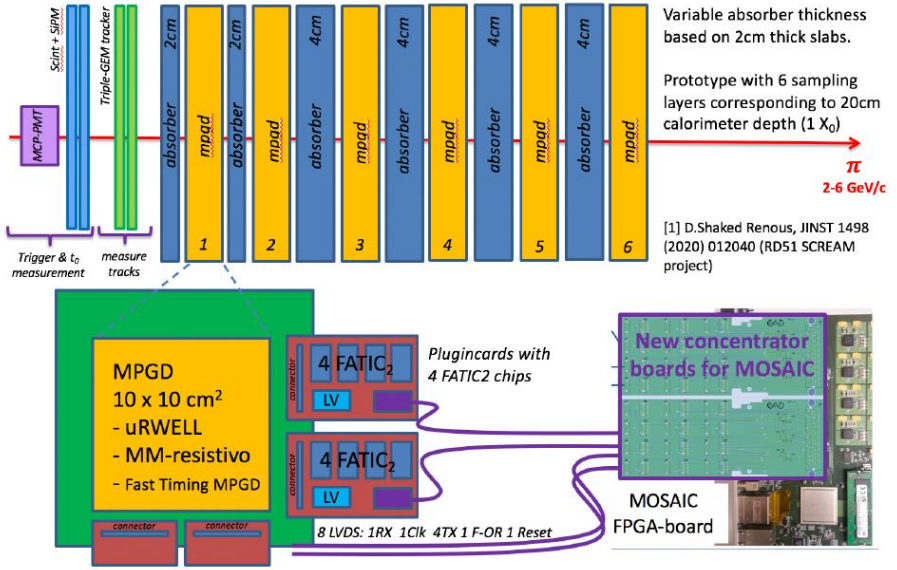
Figure 2. A single-phase TPC with a L-MHSP (or L-COBRA, shown) coated underneath with CsI. Ionization electrons and UV-induced photoelectrons from CsI are collected into the L-MHSP holes, and drift towards the anode strips. VUV photons emitted by EL + small avalanche near the strips, are detected by the top photo-sensors. Another fraction of S1 photons are detected by bottom photo-sensors.

Development of Resistive MPGD Calorimeter with timing measurement (2021)

RD51 Institutes:

1. *INFN sez. Bari, contact person: piet.verwilligen@ba.infn.it*
2. *INFN sez. Roma III, contact person: mauro.iodice@roma3.infn.it*
3. *INFN LNF Frascati, contact person: giovanni.bencivenni@lnf.infn.it*
4. *INFN sez. Napoli, contact person: massimo.dellapietra@na.infn.it*

Design of MPGD-based HCAL cell



Publication Policy

Publication Policy (RD51)

The majority of the scientific publications of the collaboration members are not considered as a research work of the Collaboration and the authorship is in the hands of the institutes involved in the work, granting clear ownership of the work and preserving a clear identity of the groups.

Acknowledgments, when justified, are of mutual benefit.

Article 13 : Theses, Publications and Conference Contributions

13.1 One copy of any Ph.D. thesis or similar academic document relating to the experiments of the RD-51 programme must be sent by the Institution(s) concerned to the CERN Library for inclusion in its collection.

13.2 The results of the research work of the Collaboration can be published in the following forms:

a. Regular status reports requested by the LHCC. All members of the Collaboration are authors. The members of the Collaboration Board maintain the list of authors from their Institute.

b. Publications in scientific journals.

1. Reviews covering the research programme of the whole Collaboration. All members of the Collaboration are authors.
2. Reviews and specialized articles describing the research work of one or several research projects. The Conveners concerned discuss and, if required, decide on the list of authors in agreement with the involved Institutes.
3. Papers produced in the framework of the activity of RD51. Before publication the authors should inform the corresponding Conveners and insert the manuscript in a dedicated list linked to the RD51 home web site. The paper should be published with the explicit notation: "This work has been performed in the framework of the RD51 Collaboration" or "This work has partly been performed in the framework of the RD51 Collaboration".

c. Internal RD51 notes.

13.3 The review of part or all the results of the research work of the Collaboration can be presented at workshops and conferences as:

a. Contributed talks. The speaker discusses the abstract with the Conveners. Written proceedings are treated as normal publication (13.2.b above).

b. Invited talks. In the case that the invitation is received by the Collaboration, the choice of the speaker is the responsibility of the Spokespersons in agreement with the Conveners. Written proceedings are treated as normal publication (13.2.b above).

Where presentations are subject to a length limitation, it is permissable to use, as authors list, the name of the speaker only, along with the statement "On behalf of the RD51 Collaboration" and a footnote indicating the web page where the complete authors list is given.

RD51 Internal Notes

https://espace.cern.ch/test-RD51/RD51 internal notes

RD51 Collaboration ▸ RD-51 internal notes ▸ All Documents

internal notes on R&D work of RD-51

Home | Help | Search this site...

Pictures
- RD51 Collaboration Pictures

Documents
- MB Meetings Minutes
- RD51 Documents
- New Institutes Survey
- Proposal skeleton
- Old Documents Library
- LHCC
- RD51 Beam Schedule
- RD-51 internal notes
- CB meeting minutes

Discussions
- Conveners Discussion
- WG1: Technological Aspects and Development of New detector Structures
- WG2: Common Characterization and Physics Issues
- WG3: Applications
- WG4: Simulations and Software Tools

Type	Name	Modified	Modified By	No
	1_RD51-NOTE-SUMMARY-13052022	14/05/2022 04:05 AM	Maksym Titov	1_RD51-NOTE-SUMMARY
	RD51-NOTE-2022-004	14/05/2022 04:00 AM	Maksym Titov	RD51-NOTE-2022-004
	RD51-NOTE-2022-003			
	RD51-NOTE-2022-002			
	RD51-NOTE-2022-001			
	RD51-NOTE-2021-005			
	RD51-NOTE-2021-004			
	RD51-NOTE-2021-003			
	RD51-NOTE-2021-002			
	RD51-NOTE-2021-001			
	RD51-NOTE-2020-006			
	RD51-NOTE-2020-005			
	RD51-NOTE-2020-004			
	RD51-NOTE-2020-003			
	RD51-NOTE-2020-002			
	RD51-NOTE-2020-001			
	RD51-NOTE-2019-006			
	RD51-NOTE-2019-005			
	RD51-NOTE-2019-004			
	RD51-NOTE-2019-001			

RD51 INTERNAL NOTES

YEAR 2022

RD51-NOTE-2022-004 – "Novel electron and photon recording concepts in noble-liquid detectors" (by A. Breskin)

RD51-NOTE-2022-003 – "REST-for-Physics, a ROOT-based framework for event oriented dataanalysis and combined Monte Carlo response" (by K. Altenmüller, S. Cebrián, T. Dafni, D. Díez-Ibáñez, J. Galán, J. Galindo, J. Antonio García, I. Irastorza, G. Luzón, C. Margalejo, H. Mirallas, L. Obis, O. Pérez, K. Han, K. Ni, Y. Bedfer, B. Biasuzzi, E. Ferrer-Ribas, D. Neyret, T. Papaevangelou, C. Cogollos, E. Picatoste)

RD51-NOTE-2022-002 – "Performance of Angle-of-Arrival Algorithms for an Inflight Triple-GEM Detector" (by M. Luntz, M. Hohlmann, D. Madden)

RD51-NOTE-2022-001 – "Resistive Micromegas high-rate and long-term ageing studies at the CERN Gamma Irradiation Facility" (by B. Alvarez Gonzalez, E. Farina, P. Iengo, L. Longo, J. Samarati, G. Sekhniaidze, O. Sidiropoulou, J. Wotschack)

YEAR 2021

RD51-NOTE-2021-005 – "Development of a Simulation Model and Precise Timing Techniques for PICOSEC-Micromegas Detectors" (by A. Kallitsopoulou, Master Thesis)

RD51-NOTE-2021-004 – "Micro-Pattern Gaseous Detectors in High-Energy and Astroparticle Physics" (by F. Sauli)

RD51-NOTE-2021-003 – "MBGEM: a stack of borated GEM detector for high efficiency thermal neutron detection" (by A. Muraro, G. Claps, G. Croci, C. C. Lai, R. De Oliveira, S. Altieri, S. Cancelli, G. Gorini, R. Hall-Wilton, C. Höglund, E. Perelli Cippo, L. Robinson, P. Svensson, F. Murtas)

RD51-NOTE-2021-002 – "RD51 DLC Workshop Report, RD51 Mini Week 10-13 February 2020" (by RD51 Resistive DLC collaboration, RD51 Management Board)

RD51-NOTE-2021-001 – "Medical Applications of the GEMPix" (by J. Leidner, F. Murtas, M. Silari)

YEAR 2020

RD51-NOTE-2020-006 – "Report on DLC Applications" (by A. Valentini)

RD51-NOTE-2020-005 – "Development of Micromegas detectors with resistive pads" (M. Chefdeville, C. Drancourt, N. Geffroy, T. Geralis, A. Kalamaris, Y. Karyotakis, D. Nikas, F. Peltier, A. Psallidas, M. Titov, G. Vouters)

RD51-NOTE-2022-004

Novel electron and photon recording concepts in noble-liquid detectors

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ABSTRACT:

We present several novel ionization-electron and scintillation-photon recording concepts in noble-liquid detectors, for future applications in particle and astroparticle physics and in other fields. These involve both single- and dual-phase detector configurations with combined electroluminescence and small charge multiplication in gas and liquid media.

KEYWORDS: Noble liquid detectors (scintillation, ionization, double-phase); Dark Matter detectors (WIMPs, axions, etc.); Neutrino detectors; Micropattern gaseous detectors (MSGC, GEM, THGEM, RETHGEM, MHSP, MICROPIC, MICROMEGAS, InGrid, etc.);

CERN Affiliation

CERN Affiliation (user registration)

CERN is the hosting laboratory for DRD1

Member of the DRD1 collaboration can be registered as CERN users to be able to work on site.

The standard user registration requires a signed MoU from the institute. Because of this, we are not yet in the condition to register you as official CERN users.

However, if you need (*) to be affiliated now to CERN, we have the following options:

- ***If your institute is in RD51, we can still register new users under RD51.***
- ***If your institute is not in RD51 but it is connected to any other experiment or collaboration at CERN, you can ask them if they would accept to register you in this transition phase.***
- ***If your institute has no connection with CERN, we can unofficially register new users for the maximum length of three months. This option should be used only when the affiliation is really required. Unofficial users will not show up in the CERN Grey Book.***

(*) To enter CERN it is not required to be a user. Visitor Card can be issued to be able to enter CERN for on site events (this Collaboration Meeting being one example). If you need to work on site and if you require to access RP supervised or controlled area, a user registration is required. If you need a computing account (lxplus), a CERN user registration is required.

DO NOT HESITATE TO CONTACT US IF YOU NEED MORE INFORMATION

CERN IT resources (here focusing only on e-groups and CERN computing account)

https://drd1.web.cern.ch/

General Summary on WG8 Session -> Thursday Morning Session

Specific information and discussions in the WP and WG sessions

e-groups
(used as mailing list and to provide accesses to resources)

DRD1-Members
List of all the Member of the Collaboration. Subscription is done through the contact person of the institute. It will be updated in a yearly basis, and it will reflect the actual members of the collaboration.

DRD1-CB
List of all contact persons of each institute that is member of DRD1 (one contact per institute)

DRD1-WG-Conveners
List of all the Working Group Conveners

DRD1-WP-coordinators
List of all the Work Package Coordinators

DRD1-all: Click here to subscribe or unsubscribe

https://e-groups.cern.ch/e-groups/EgroupsSubscription.do?egroupName=drd1-all

DRD1-all
Self subscription, including all previous mailing lists and everyone that is interested on following the DRD1 activities.

Other mailing lists will be created according to the final DRD1 organization and management.

e-groups for Working Group

Self subscription

WG1: ***https://e-groups.cern.ch/e-groups/EgroupsSubscription.do?egroupName=drd1-wg1***

WG2: ***https://e-groups.cern.ch/e-groups/EgroupsSubscription.do?egroupName=drd1-wg2***

WG3: ***https://e-groups.cern.ch/e-groups/EgroupsSubscription.do?egroupName=drd1-wg3***

WG4: ***https://e-groups.cern.ch/e-groups/EgroupsSubscription.do?egroupName=drd1-wg4***

WG5: ***https://e-groups.cern.ch/e-groups/EgroupsSubscription.do?egroupName=drd1-wg5***

WG6: ***https://e-groups.cern.ch/e-groups/EgroupsSubscription.do?egroupName=drd1-wg6***

WG7: ***https://e-groups.cern.ch/e-groups/EgroupsSubscription.do?egroupName=drd1-wg7***

WG8: ***https://e-groups.cern.ch/e-groups/EgroupsSubscription.do?egroupName=drd1-wg8***

e-groups for Work Packages

Organized according to the specific need of each work package by the various work package coordinators.

CERN Computing Account

It requires the CERN Affiliation (see previous slides about CERN user registration) and contact us in case of need.

Overview of the first Collaboration Meeting emphasising all relevant topics that will be presented and discussed during the Collaboration Meeting

Scope of the meeting

- ***Discuss organisational items + next steps***
- ***Start scientific discussions → presentations on the ongoing R&D activities***

- ***Plenary Sessions & Closeout***
  - ***General Discussion and Proposals for Next Steps → Now***
  - ***Closeout → Friday 11 am***

Scope of the meeting

- ***Work Packages***
  - ***General information + presentation of all 9 Work Packages → today (3:30 pm) and tomorrow (2:00 pm)***
  - ***Plenary Discussion and Proposals for next steps (input for CB) → Thursday 11:30 am***
- ***Working Group Sessions***
  - ***Discussion on the scope of various WGs, organisation, common objectives, next steps, etc.***
  - ***Scientifical and Technical contributions relevant to the WGs***
- ***IT Resources***
  - ***General Summary on WG8 Session → Thursday Morning (9:00 am)***
  - ***Specific discussion during the WG sessions***

- ***Collaboration Board (Institutes representatives): Thursday 1:30 pm***